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CENTER FOR TEACHING AND LEARNING
UNIVERSITY OF NORTH DAKOTA
GRAND FORKS 58201

LAST ISSUE THIS YEAR

This is the final issue for this year. If you wish to continue receiving INSIGHTS during the next school year, see page 13.

CENTERS, METRICS

INSIDE THIS MONTH: "Learning Centers"
by Bob Hollenbeck, associate professor, Center for Teaching and Learning, and

Michael W. Radis, former Haverford, PA, school teacher, now a graduate student in CTL.

"The Metrics Are Coming!"
by Ron Kutz, assistant professor, Center for Teaching and Learning.

"Classroom Book Clubs"
by Maryellen Lesmeister, teacher, Longfellow School, Great Falls, Montana (participating teacher in CTL-sponsored Follow Through program).

HAVE A GOOD SUMMER - SEE YOU NEXT YEAR

VOLUME 6, NUMBER 8
MAY 1974

INSIGHTS into open education

LEARNING CENTERS

By Bob Hollenbeck and Mike Radis

A Learning Center may be defined as an area in a classroom at which are the activities and tools needed in the acquisition, or reinforcement, of a given knowledge or skill.

Learning Centers should:

1. promote independent learning skills.
2. free the teacher to work with small groups, individual students, and provide time for individual conferences.
3. promote peer-teaching.
4. develop decision-making skills on the part of the learner.
5. provide for self-evaluation.

In order to do this, a Learning Center should have, according to Joanne Duncan, the principal of the Wallingford Elementary School in Wallingford, Pennsylvania:

1. "Eye-catching attractiveness-something to attract children to want to investigate." This may be done with pictures and catchy titles such as "Get Wrapped Up In Math" with a picture of a mummy. Such phrases, pictures and titles invite children to explore the activities, and the Center can be built around the theme suggested. That is, having the mummy's wrappings contain activities which meet the Center's objectives.

2. "Directions and stated objectives." The learners need to know why they are there and what to do independently.

3. "More than one assignment, assignments must offer a challenge, assignments must offer promise of success, and assignments should have multi-level expectations." Activities at the Centers should provide every child in the room with the opportunity to meet success. Not every child will find success at the same level of activity; therefore, the Center must be multi-leveled so that no child will become frustrated by failure and every child will find a challenge.

4. "Answer sheets if possible, "self-checking can be of many types, a few of which are:
   a. puzzles, if the pieces fit together, the answer is correct.
   b. color-coding, number-coding such as red question-red answer.
   c. answer slide-move object to expose answer or overlays.

5. "At least one open-ended response if possible." This should be an activity which will lead the child to discover more and work independently.

6. "Multi-media materials; such as books, pamphlets, magazines, films, film strips, slides, etc." These should be at different reading levels and levels of understanding.

7. A quiet area should be identified where children can sit and work independently.

Centers should have manipulative materials so that the student is not simply working on a collection of mimeographed sheets. The learner should find materials at the Center which are activity oriented and problem-solving in nature. Games, manipulative materials, and other materials should be available for the children's use so that they are physic-

ally involved in the learning situation and not only reading and writing. In the words of the old Chinese proverb,

I hear and I forget
I see and I remember
I do and I understand.

The following is a philosophy for the use of Learning Centers to help a teacher use them effectively as stated by the Instructo Corporation:

"1. No lock step, any child can do any or all activities.
2. Teachers must explain and introduce the Centers to the class.
3. All children do not have to go to Centers. Those who cannot function at Learning Centers should not be forced to participate.
4. Children can be used to help other children at the Center.
5. Centers can be used as reinforcement for some children and as introductory learning for others.
6. There is need for continual diagnosis by the teacher to determine the level of ability of the children in the classroom so that children are directed to the proper Center and the proper level within the Center.
7. Learning Centers need to be relevant to class development in a certain area and will have fulfilled their objectives when a majority of a class have completeed them."

The above are guidelines for a teacher and respond to some of the questions often asked concerning the use of Learning Centers.

The physical setting of the classroom may help to dictate the use of Centers in a given classroom. The teacher must organize the physical setting in such a way as to produce an atmosphere conducive to the use of Learning Centers.

Tables, chairs, carrels, and other physical features of the room must be organized to produce the best lighting possible at each Center. The Centers must be accessible to students with the least amount of disturbance to others.

Learning Centers can be used in a variety of ways. They may be used to extend or enrich other learning experiences which are occurring in the classroom.

Used in this way, Learning Centers become another tool used to promote learning. Some teachers may want to organize the majority of learning experiences occurring in the classroom in such a way that Learning Centers become the dominant factor in the classroom. The curriculum can be organized so that Learning Centers introduce, develop, reinforce, extend and enrich the content to be learned.

Two types of Learning Centers should be utilized by the teacher who wants to begin to use Learning Centers. Some Centers should be required of all students while others should be elected by the student.

The length of time that a given Center should remain in operation varies with the type of Center in use. The time may vary from a few days to several weeks. Usually, required Centers need to be replaced every three or four days while elective Centers may remain in operation for a longer period of time. However, any Center which is not used by students should be replaced immediately.

The question often arises concerning the number of Centers needed for a given group of children. There is no absolute number of Centers that should be utilized. However, usually no more than four students should work at a given Center at one time.

Howard Blake of Temple University suggests that a teacher should prepare materials for twice as many Centers as are in use in the classroom. This would suggest that a class of twenty-four students should contain a minimum of six Learning Centers in operation and at least twelve additional Centers should be prepared for use.

An important feature of Learning Centers is that activities should be self-checked by the learner. Examples

of self-checking devices are given elsewhere in this paper. However, final activities in a Learning Center should be identified and be teacher-evaluated.

Evaluation must be a continuous process. The teacher must know at all times at what Centers students are working. This usually involves some sort of check list. The following type of check list has proven to be successful for Mike Radis:

> A type of student record-keeping sheet that Mike found very useful in determining where the students had been each week and what they had done is shown below. This form was filled out by each child each week and was used in conjunction with a weekly conference between student and teacher.

NAME _____ DATE _____

CHART #1
LEARNING CENTER SCHEDULE

Center Number	Monday	Tuesday	Wednesday	Thu
1				
2				
3				
4				
5				

This form was 8 1/2 x 11 and had space for about 20 Centers and library space. Each day the child would check on the left side of the dotted line the Centers he planned to visit that day, and on the right side the Centers he actually did use. This gave the child an opportunity to plan his time effectively. He was able to see for himself those Centers he wished to go to but was unable to and to reschedule them for a different day.

At the weekly conference, the student and Mike would discuss what he had done and look at some of the work done at these Centers. The conference also gave Mike an opportunity to guide the students into Centers and Center activities from which he felt they might profit; and also to make sure that they were actually meeting success at the Centers at which they had been working.

This is, of course, only one type of student record-keeping device. Each teacher must choose a form which fits his classroom and which he and his students can feel comfortable using, and one which suits his purposes for the class setting.

One teacher had space on her sheet for the child to make comments about the work done at the Center. So there are many types and each teacher should find one that he/she likes.

Evaluation of the Learning Center is vital. A teacher must decide whether a specific Learning Center is valuable enough to retain for future use. The best source of evaluation is students who have engaged in the Learning Center activities. Questions which need to be answered include the following:

1. Was the Center used?
2. Did students meet success?
3. Did students become frustrated?
4. Was the Center attractive?
5. Were the objectives of the Center achieved?

A teacher who is interested in using Learning Centers in the classroom should begin slowly. One or two Centers should be developed and introduced. As the teacher and students adapt themselves to the use of the Centers, then more can be introduced.

However, it must be remembered that students must learn how to study using Learning Centers. It must also be remembered that the use of Learning Centers does not replace other forms of instruction completely. The teacher still will need to use large group, small group and one-to-one instructional patterns.

Howard Blake of Temple University suggests the following format for Learning Centers:

ACTIVITY CENTER FORMAT

Must contain (consider readibility level)

1. Name of Center
2. Objective(s)
3. Clear directions and instructions for completing the task.
4. Materials needed (books, consumable materials, etc.)
5. Directions, if necessary for self-scoring (check answers on back of card, at the "answer table", etc.)
6. Directions for recording score(s) or progress (on personal chart, on chart at the Center, on classroom chart, etc.)
7. Directions, if necessary, for what to do with the finished product (place it in envelope, in box, on teacher's desk, etc.)

Two examples of Learning Centers in Mathematics follow. These were designed by students working in a Learning Center activity at the University of North Dakota.

METRIC ZOO

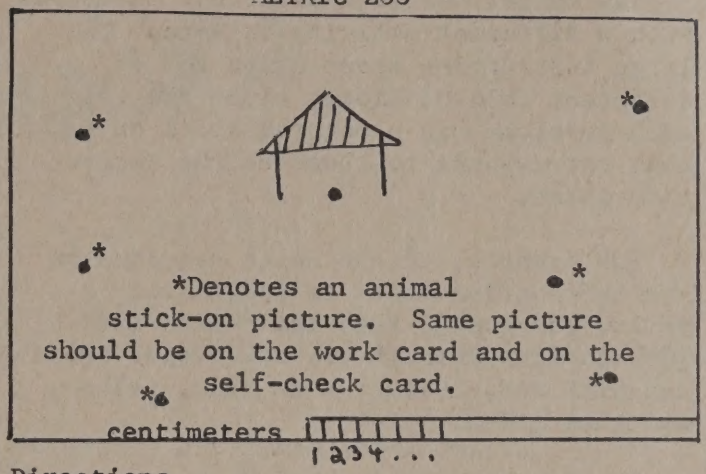
A Learning Center

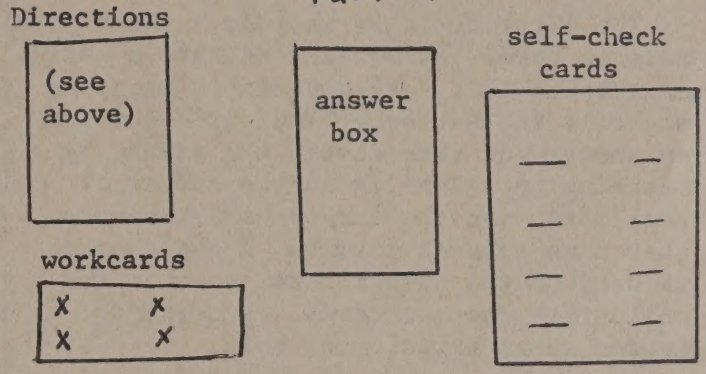
OBJECTIVE: To introduce children to measuring with centimeters.

DIRECTIONS: The animals are lost. Do you want to help them find their way back to the zoo? 1) Pick up a card; 2) Put your name on the back; 3) To measure how far the three animals are from the zoo, take a string and measure from the black dot under the animal to the black dot at the zoo gate; 4) Hold the string up to the metric ruler at the bottom of the chart to find your answer; 5) Write your answers on the blanks on your card; 6) Check your answers on the check cards; 7) Put your card in the answer box.

MATERIALS NEEDED: Construction paper, magic markers, stick-on animals, index cards, poster board with picture of zoo in the middle, animals at various distances from the zoo, a scale of inches on the top of the board (optional), and a metric scale on the bottom of the board; string, and an answer box.

METRIC ZOO





DIRECTIONS FOR SELF-SCORING: Check cards are provided with the picture of each animal in plain view. When you pull the card out of the slot, it will show how many centimeters the animal is from the zoo.

DIRECTIONS FOR RECORDING SCORES: Each card will have blanks under the picture of the animal. The child will fill in the blanks with the number of centimeters.

DIRECTIONS FOR FINISHED PRODUCT: After checking the answers, the cards will be put in the answer box.

SINK YOUR MIND INTO SETS AND SUBSETS

Objectives:

a) help identify number of elements in a set

b) make up sets of their own from a given set= leads into subsets

c) recognize that the objects in a set don't have to be the same size, color, shape, etc.

This Center is geared for first and second grade pupils.

The Center has four different envelopes with a different activity in each. The large instruction sheet has a row of different colored blocks along the top. Each envelope has a colored block on it that corresponds to those on the instruction sheet.

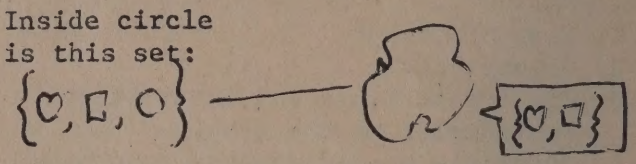
For example, if the color sequence on the instruction sheet is red, blue, yellow and green, then the child would know to work through the envevlopes starting with red, moving on to blue, yellow, and then green.

The first activity includes cards with sets on them. Below each set are a series of numbers that tell how many elements might be in that set. The child chooses an answer and then checks his answer by matching up the color in the corner of that card with the answer card having that same colored corner. A paper punch is used on the answer card, so when the child fits the two cards together, the answer shows through the hole.

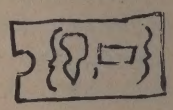
The next two envelopes includes work telling how many elements are in the set and how many different sets can be made from this given set. Shapes can be cut out and children can glue them on paper so the teacher can have a way of telling what the child has done.

Below each question, there are a series of possible answers. After the child has chosen the correct answer he flips a strip of paper over from the back and the correct answer appears in the cut-away circle. This exercise includes shapes of the same color, the same shapes but different sizes and colors to help the children see that a set doesn't have to be of one shape, size or color, etc.

The last activity includes a circle with a given set in the middle and different shapes cut into the border. The children are told, first, to pick out all the possible subsets that can be made from this set, from the ones offered on strips of paper. Each strip that contains a correct subset will have a shape cut out of the end of that strip that will fit into the larger circle. If the wrong subset is chosen, then the shape at the end of that strip will not fit into the circle and the child will know he has chosen a wrong subset.



This subset is correct- it will fit into the circle.



This subset is incorrect- it will not fit into the circle.

When the child has finished the exercise, he would mark an X beside his name corresponding with the color part of the envelop he has finished.

	Red	Blue	Yellow
Pat	X		
Betty	X	X	

The use of Learning Centers allows teachers to employ another and perhaps new teaching strategy. As we learn more about how children grow and learn, our teaching strategies must alter. The Learning Center helps the teacher implement a concept that has been with us for a long time; that is, concern for the individuality of the learner. Learning Centers help the teacher focus on helping the child grow in his ability to manage independent learning. Learning Centers add a new dimension to teaching by helping the teacher to meet the personal needs of the learner.

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THE METRICS ARE COMING!

By Ron Kutz

Several states have required teaching of the metric system, most text companies are coming out with programs, and teachers are trying to decide what to do and how to do it. Following is a discussion of the metric system, some suggested activities for classroom use, sources of metric measures; suggestions for making your own measures and a bibliography.

The metric system, like the English system, is a set of standard measures for length, volume, temperature and mass or weight. Unlike the English system, the metric system is a decimal system like our present money system. Instead of the hodgepodge of relationshiops between units that exists in the English system (eg. 16 oz. in a pound, 12 inches in a foot), the relationships in the metric system are always a power of 10, indicated by a prefix (eg. 1000 grams in a kilogram, 10 meters in a dekameter).

The basic units in the metric system are: for length, the meter; for volume, the liter or cubic meters; for temperature, degrees (Celsius); for weight, the gram. (This is actually an abuse of the term. The gram is a mass unit, not strictly comparable to the pound, which is a force unit. The distinction is difficult for laymen, and the abuse of the language given here is standard, and causes difficulty only if a trip to the moon is planned.)

In the English system we have several units for the same measure. It is not convenient to measure distances between cities in inches, so we use miles. Likewise, to measure a table top, the mile would not be an appropriate unit. The conversions are largely based on folklore and historical accident. Similarly, in the metric system, it is convenient to expand or contract our basic units. However, we do so now by multiplying by a power of 10, and indicating this by a prefix. The common ones are:

milli--.001 or 1/1000 times

centi--.01 or 1/100 times

deci--.1 or 1/10 times

deka--10 times

hecto--100 times

kilo--1000 times

Hence, a centimeter is .01 meter, a kilometer is 1000 meters, a kilogram is 1000 grams. Not all of these are used equally: the most common are--for length, millimeter, centimeter, meter and kilometer; for weight, gram, kilogram; for volume, milliliter, liter.

The prefixes are not used for temperature. It would be more normal to talk about 12 meters than 1.2 dekameters, or even 10 meters over a dekameter. To make the metric system useable for children, these traditions must be adhered to. The abbreviations are also useful; they are: Millimeter--mm; Centimeter--cm; Meter--m; Kilometer--km; Gram--g; Kilogram--kg; Milliliter--ml and Liter--l.

Before discussing classroom activities, a word of caution is advisable. The goal of teaching the metric system is to enable people to live in a world where the statements, "It's -5 degrees C° out," "The speed limit is 90 km/hr," and "I am 1.9 m tall", are as meaningful as "It's 23° out", "The speed limit is 55 mph", and "I am 6'3" tall", since they give exactly the same data.

The goal is not to produce people who can rapidly convert weights and measures. We do not learn conversions from a text, we learn them from use.

Most of us learned about rods from a book. How many feet are in a rod? We can convert from inches to feet because we use both and need to convert. This is how the metric system must be learned.

In what follows, I will suggest some activities that could fit into your classroom; you will be able to find many more. The most important thing is to have metric measures available and use them when measurement is necessary.

The next most important thing is to be alert for natural uses of the tools. Whenever you reach for a yardstick, ask yourself if a meterstick will do. Instead of saying, "Get me six feet of string", say "Get me two meters of string:. As in any measuring activity, ask for estimates first, so that children think about the measure and don't just "find the answer".

For primary grades, activities are aimed primarily at gaining experience with the basic units of measure. You should try to obtain unmarked meter sticks, a Celsius thermometer, kg and half-kg weights, centimeter graph paper, liter and half-liter containers. I will discuss later how to get such items.

Then, simply measure everything in sight, at every opportunity. Measure the room, the school, the grounds in meters, make maps using a scale of 1 cm=1 m (use cm graph paper). Measure the height of the children and if you can get a kg scale, weigh them.

Record the outdoor temperature in degrees Celsius at recess; keep a chart. Mark a string at 1 m intervals and see how far people can throw a ball, a marble, a wad of paper. Cuisenaire rods are metric; white is a 1 cm cube, orange is 10 cm long. Use these to measure books, desks, meter sticks.

At the sand table or water table, find containers that hold more than a liter, less than a liter.

How many liters of water does the water table hold? What is the area of a leaf in cubic cm (trace the leaf on cm graph paper; count squares)?

Pirate maps with metric units can be used; these can be scaled down to classroom size by having the map in cm and numbering 5 possible "treasure" locations. Those who measure sufficiently accurately to get to the right number, "find the treasure". The list could go on, but this should give some beginnings.

For intermediate grades, the starting points would be the same as above if the children have not used metric measures. Begin using meter sticks and other measures which have the graduated markings. The principal differences in working with the intermediate grades, beyond an increasing complexity in the measurements asked for, are that you will begin getting some conversions between systems and you will begin using the decimal nature of the metric system.

First, a word about conversions. Assuming we have "internalized" the English system, that is, we have a feeling for feet, yards, pounds, etc., memorizing conversion factors gives us some ability to work with metric units as long as we remember the factors. It does not help us internalize the metric system. What is needed for today's children is true bilingualism in both systems; that is, an ability to "converse" in both systems as the need arises.

We, therefore, need a "feel" for the relative sizes of measures in the two systems, not precise conversions. To obtain this, have children make and record measurements in both systems, and make rough comparisons. Eventually, have them measure in one system and then "estimate" the measure in the other system.

Some will just guess, some will use the rough comparisons obtained earlier, some may begin using ratio and proportion and some may develop precise conversions. Encourage development of more precise methods, but don't push progress beyond the child's readiness.

One of the main side benefits of the metric system is that it gives you a concrete example of a decimal system. Some examples may clarify the approach.

At first, using only one unit, children will say, "I am about 1 1/2 m tall". This progresses to, "I am 1m 4 dm tall". Have them write this as 1.4m, as another shorter way of writing the same thing. This progresses to 47 cm is 4.7 dm is .47 m, and so forth. (We assume they know by now there are 10 dm in a meter, 10 cm in a decimeter, etc.) The same can be done with volume and weight measurements.

COMMERCIAL SOURCES OF MATERIAL:

Creative Publications Catalogue
P.O. Box 10328
Palo Alto, California 94303

Creative Publications has marked and unmarked meter sticks, rules, tape measures, a variety of liter containers, centimeter cubes, metric weights, a metric bathroom scale, etc. One of the leaders in metric and other math material.

Dick Blick
P.O. Box 1267
Galesburg, Illinois 61401

Similar to Creative Publications. Also check school supply stores, discount houses, etc. The list of sources is growing rapidly.

Metric Training Aids (Price List)
Metric Association, Inc. Sugarloaf Star Route,
Boulder, Colorado 80302

Metric Aids: A Catalogue of Materials for Metric Teaching Aids,
75 Horner Ave.
Toronto, Canada

SUGGESTIONS FOR MAKING YOUR OWN MATERIALS:

You first need a standard, which can be obtained from the high school chemistry and physics departments. Make meter sticks sticks from any thin flat sticks; leave some unmarked, mark "1 meter", mark 10 decimeter markings. Make 1 dm sticks as above, or use cuisenaire rods.

Make liter containers in various shapes by filling plastic containers with 1 liter of water, marking the water line, and cutting at the water line. You may graduate some of them in 100 ml intervals.

Make 1 kg, 1/2 kg=500g, 1/4 kg=250g, .1 kg=100g weights from clay, wood or by filling containers with lead shot.

SOME BOOKS ON METRICS:

Cortese, Carole E., Metric Measurement, New York; American Book; 1970

Henderson, G.L., and Glunn, L.D., Let's Play Games in Metrics; National Textbook Co.; Skokie, Illinois

Donovan, Frank, Prepare Now for a Metric Future ; New York; Weybright and Talley 1970

Metres, Litres and Grams; Schools Council London; School Council Publications, 1971; pp. 40. Distributed in U.S.A. by Citation Press.

Metric Supplement to Science and Mathematics; Boulder Co.; Metric Association, Inc.; 1971 (revised).

PROFESSIONAL JOURNALS WITH ARTICLES ON METRICS:

Ambler, E., "Measurement Standards, Physical Constants, and Science Teaching", Science Teacher; Vol. 38, Nov. 1971; pp. 63-71

Arithmetic Teacher, Vol. 20, No. 4; April 1973 (entire issue)

Bowles, D.R., "Get Ready for the Metric System", Instructor, Vol. 81; Dec. 1971; pp. 69-70

Briggs, E., "Metrication in the School Curriculum", Trends in Education; Vol. 26, April 1972; pp. 35-40

Crane, E., "Metrics are Coming"; Grade Teacher; Vol. 88; Feb. 1971; pp. 88-89

Grieder, C., "Let's Start Measuring Up to the Metric Scale"; Nation's Schools, Vol. 88, Nov. 1971; pp. 26

" The International System of Units (SI)"; Physics Teacher; Vol. 9; Oct. 1971; pp. 379-381

McFee, Evans E., "Education in Decimal Currency and the Metric System"; School Science and Mathematics ; Vol. 69, No. 7; Oct. 1969; pp. 644-646

"Metrication Urged by N.S.T.A. Committee" Science Teacher; Vol. 38; No. 1. Jan. 1971; pp. 6-7

"An American Dilemma: Measuring Up in the Future"; School Science and Mathematics ; Vol. 71, May 1971; pp. 435-436

Bowles, D.R., "Metric System in Grade Six "; Arithmetic Teacher ; Vol. 11, Jan. 1964; pp. 36-38

Branscomb, L.M.; "U.S. Metric Study"; Science Teacher; Vol. 38; Nov. 1971; pp. 58-62

Cortright, R.W.; "Adult Education and the Metric System"; Adult Education; Vol. 20, Nov. 1971; p. 190

Edson, L.; "New Dimensions for Practically Everything: Metrication"; American Education; Vol. 8; April 1972; pp. 10-14

Helgren, Fred J.; "The Metric System in the Elementary Grades"; Arithmetic Teacher; Vol. 12, May 1967; pp. 349-353

Joly, R.W.; "Changing to the Metric System: An Idea Whose Time has Come" NASSP Bulletin; Vol. 56; Nov. 1972; pp. 47-59

"Metric System Ahead"; NEA Research Bulletin; Vol. 49; Dec. 1971; pp. 109-112

Murphy, M.O. and Polzin, M.A.; "Descriptive Analysis of the Teaching of the Metric System in the Secondary Schools"; Science Education; Feb. 1969; pp. 89-94

Nelson, O.; "Is Metric a Measure of Pain?" Industrial ARts and Vocational Education; Vol. 61; Feb. 1972; pp. 22-24

Strong, E.; "Meaningful Metric"; School Science and Mathematics ; Vol. 64; May 1964; pp. 421-422

"Think Metric"; NEA Research Bulletin ; Vol. 49; May 1971; pp. 39-42

Oberline, L.C.; "Let's Teach the Metric System Through Its Use"; Arithmetic Teacher ; Vol. 14; May 1967; p. 376

Swan, Malcolm D.; "Experience, Key to Metric Unit Conversion", Science Teacher; Vol. 37, No. 8,. Nov. 1970; pp. 69-70

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CLASSROOM BOOK CLUBS

By Maryellen Lesmeister

Classroom book clubs are an interesting and exciting way to involve children in an individualized learning situation.

They are an easy and adaptable method to get children of the primary grades involved in research activities. The book clubs are operated as a self-directed, individualized learning experience for all of the children in the classroom.

Through the Center for Teaching and Learning at the University of North Dakota and its consultants, we developed the basic idea. Our concept of an individualized and open classroom includes the opportunity for children to have a role in selecting many of their own learning activities. I found that the book club approach was an ideal way to implement my personal philosophy of the child-oriented classroom. The class learned to read and to gather information

from many sources--magazines, movies, encyclopedias, resource books, newspapers and listening to experts and talking to adults. It was a very successful way to get people from the community involved in the classroom.

After being introduced to the idea of book clubs, the children brainstormed ideas on as many subjects as they thought they would like to learn about. Two large chalkboards were filled with a wide variety of ideas, including many different animals, insects, plants, cars, space and numerous other categories. The children decided to vote on the ones in which they were most interested.

The importance of selecting subjects they really wanted to study more about was stressed. After the votes were cast, five main subject areas were selected: Horse Club, Cat Club, Dinasour Club, Plant Club and a Football Club. The number of groups depended on the number of students in the program. Three to five members to a club seemed to work best.

The next step was to get students involved in the clubs in which they were most interested. The names of the various clubs were written on large sheets of paper and placed on walls around the room. The class joined a club by signing the club sheet they wanted to join.

We then gathered questions for the various book clubs. The questions were elicited from the whole class in another brainstorming session. The questions gave each group a place to start and also gave them ideas of what kinds of information they could look for. Examples of the kinds of questions suggested for the Cat Club were:

1. What is the biggest cat?
2. How old do cats get?
3. How many different kinds of cats are there?
4. Do cats like water?
5. Can cats see in the dark?

The questions were written on the large charts the pupils signed. Each club developed a set of questions about its subject.

During the next two 1-hour afternoon periods, the clubs met in different areas of the room. The purpose was twofold: to gather all the material sources they could on their subject--encyclopedias, books from the library, magazines, resource books, newspapers, etc.; and to read and share ideas.

At this point the teacher or adult does no direct teaching. Her main function is to listen and to extend children through questions. This means the teacher has to learn when to interrupt and when not to interrupt. As the children looked through books they usually found something that caught their interest. Then the teacher could probe and help spark that interest by asking questions and introducing follow-up ideas.

A child is more apt to get involved in something which he has personally found interesting rather than in something an adult has selected for him to read. There are times when you'll want to steer certain children back on an organized track.

We had a girl who had gotten involved in sea shells and spent a great deal of time just making lists of seashells. Some teacher guidance was necessary to get her involved in categorizing her shells and using the shells in the classroom to demonstrate her knowledge.

The children discovered many interesting things about their subjects. As they found new and exciting things their faces lit up. One girl found that peanuts grew under the ground. She could hardly wait to tell me about it. It was a beautiful, spontaneous reaction to something she had discovered herself.

Our next step was to begin taking notes. After many experiments, I found that by giving the students a 3 or 4 inch strip of regular writing paper, it was much easier for them to organize their material. They wrote their information on one side of the paper. After gathering all the material they needed, we cut the strips apart putting similar information together and pasting it on larger pieces of paper. This made it

easier for them when it came time to actually write the report.

Each club chose a member who would research a certain area. Each child picked something he had found exceedingly interesting in his reading. They spent the next 4 or 5 days gathering their material and taking notes, finding pictures and drawing pictures. There was a great deal of sharing and they helped each other gather information. The teacher really needn't interfere--if they needed and asked for help she should be available. Most of the time she should be a resource person to supplement their findings.

The children were very good about reading information to the slower readers. One of the slower students was very interested in horses. He had found a book that was fairly difficult. He came and asked to have it read to him. Then one of the most amazing things happened. He said, "Boy, I sure wish I could read every word in this book!" He had finally found a need to learn to read--amazingly his reading did improve and he tried and worked twice as hard as ever before.

When the clubs had obtained all the information they could and they felt ready, they got to "teach" the class about their subject. They delegated who was going to be first--then gave their report. Some slower students showed or drew pictures and told what they learned. One of the non-readers in the Cat Club drew a picture about a cat in the dark and told us that cats really can't see in the dark. It was really a big step for her to get up, speak to the group and share what she had learned. When the group finished with their reports, we had a question/answer period. We were surprised at the insight the children had on their particular subjects. At the end of the session a "test" was handed out. The test was made by the club. They used multiple choice questions such as; (1) A horse eats (a) candy (b) hay (c) steak.

They really enjoyed deciding upon the questions or statements that they wanted to use. The members of the particular club checked the tests with a red pencil.

One reluctant student got very involved with the Blue Whale. He had never shown much interest in anything at school before this time. His attitude toward school was very poor and he did as little as possible. The new interest in the blue whale really sparked him. He began tossing out bits of information and looking up and reading all he could find out about the whale. After his presentation, the children questioned him by asking, "How big does a Blue Whale get?" Expecting the usual answer, we were impressed to hear him say, "It all depends on how much blubber he has stored up."

Comments from parents were very interesting. They were happy about their child beginning to get the idea of research and why we need to do it. Most parents were delighted at the scope and insight their child got into a subject.

There can be many approaches to the book club idea. One of our classes got involved with the subject of oceans. We brainstormed words about oceans and each student decided to pick a special sea creature which he was interested in. This became a more individual research project. The children were really good about sharing material. If they knew a certain child was studying whales and they happened to find something about whales they were eager to share it with each other. The culminating activity of our "oceans study" was a sea food dinner and it also provided an opportunity for the children to taste foods which many of them had never experienced. We had a variety of foods: clams, crabs, shrimp, salmon, sea weed, oysters and tuna. The dinner was a smashing success.

Book clubs are an excellent enrichment program and they can be used to supplement your regular reading program. In addition, they are an excellent opportunity to tap community resources.

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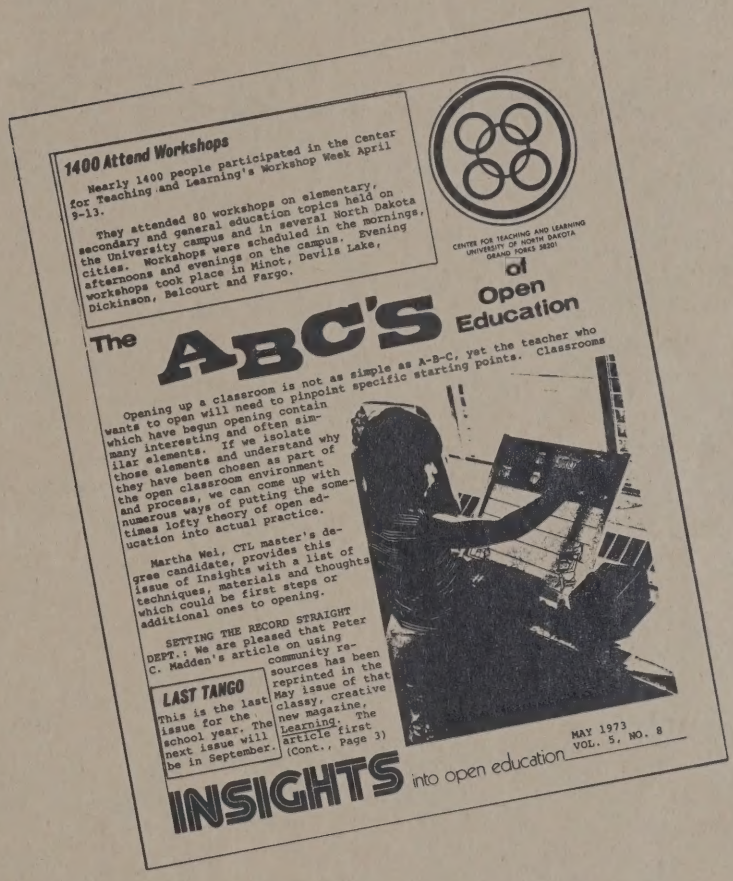

1400 Attend Workshops

Nearly 1400 people participated in the Center for Teaching and Learning's Workshop Week April 9-13.

They attended 80 workshops on elementary, secondary and general education topics held on the University campus and in several North Dakota cities. Workshops were scheduled in the mornings, afternoons and evenings on the campus. Evening workshops took place in Minot, Devils Lake, Dickinson, Belcourt and Fargo.

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The ABC'S of Open Education

Opening up a classroom is not as simple as A-B-C, yet the teacher who wants to open will need to pinpoint specific starting points. Classrooms which have begun opening contain many interesting and often similar elements. If we isolate those elements and understand why they have been chosen as part of the open classroom environment and process, we can come up with numerous ways of putting the sometimes lofty theory of open education into actual practice.

Martha Wei, CTL Master's degree candidate, provides this issue of Insights with a list of techniques, materials and thoughts which could be first steps or additional ones to opening.

SETTING THE RECORD STRAIGHT DEPT.: We are pleased that Peter C. Madden's article on using community resources has been reprinted in the May issue of that classy, creative new magazine, Learning. The article first (Cont., Page 3)

LAST TANGO

This is the last issue for the school year. The next issue will be in September.

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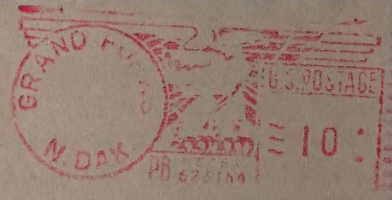

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